

FIGURE 1 PRIOR ART

200

Document 1: Mark Knopfler is a member of a famous band. He is a good singer and he plays the guitar.

Document 2: The Dire Straits are a famous band which originally had 4 members. Mark Knopfler is their lead singer and he also plays guitar.

Document 3: Robert De Niro is a brilliant actor who plays in many films. For one of his films he received an Oscar.

FIGURE 2

Document 1: Mark Knopfler member famous band. singer play guitar.

Document 2: Dire Straits famous band member. Mark Knopfler lead singer play guitar.

Document 3: Robert De Niro brilliant actor play film. film receive Oscar.

FIGURE 5

500

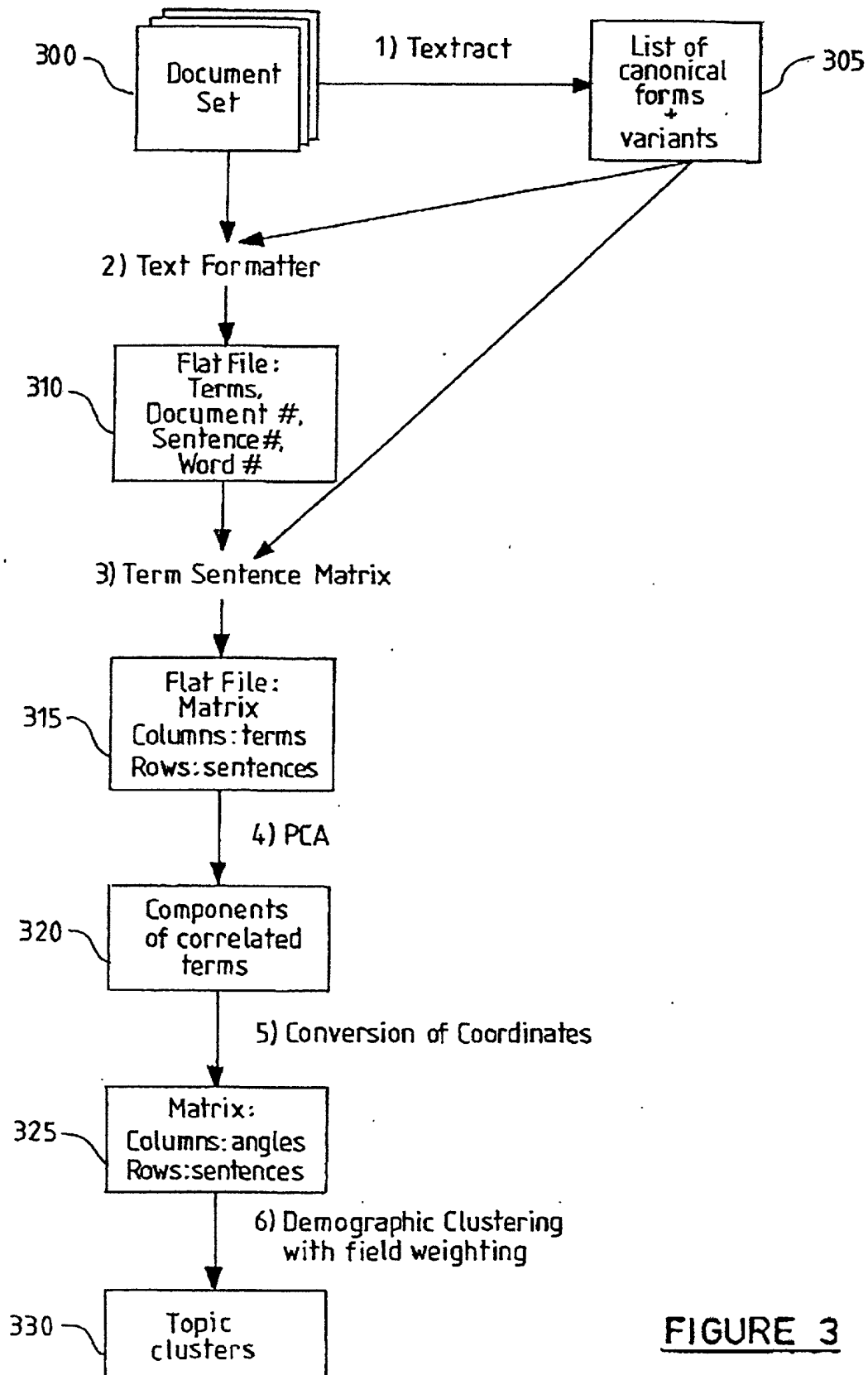


FIGURE 3

400

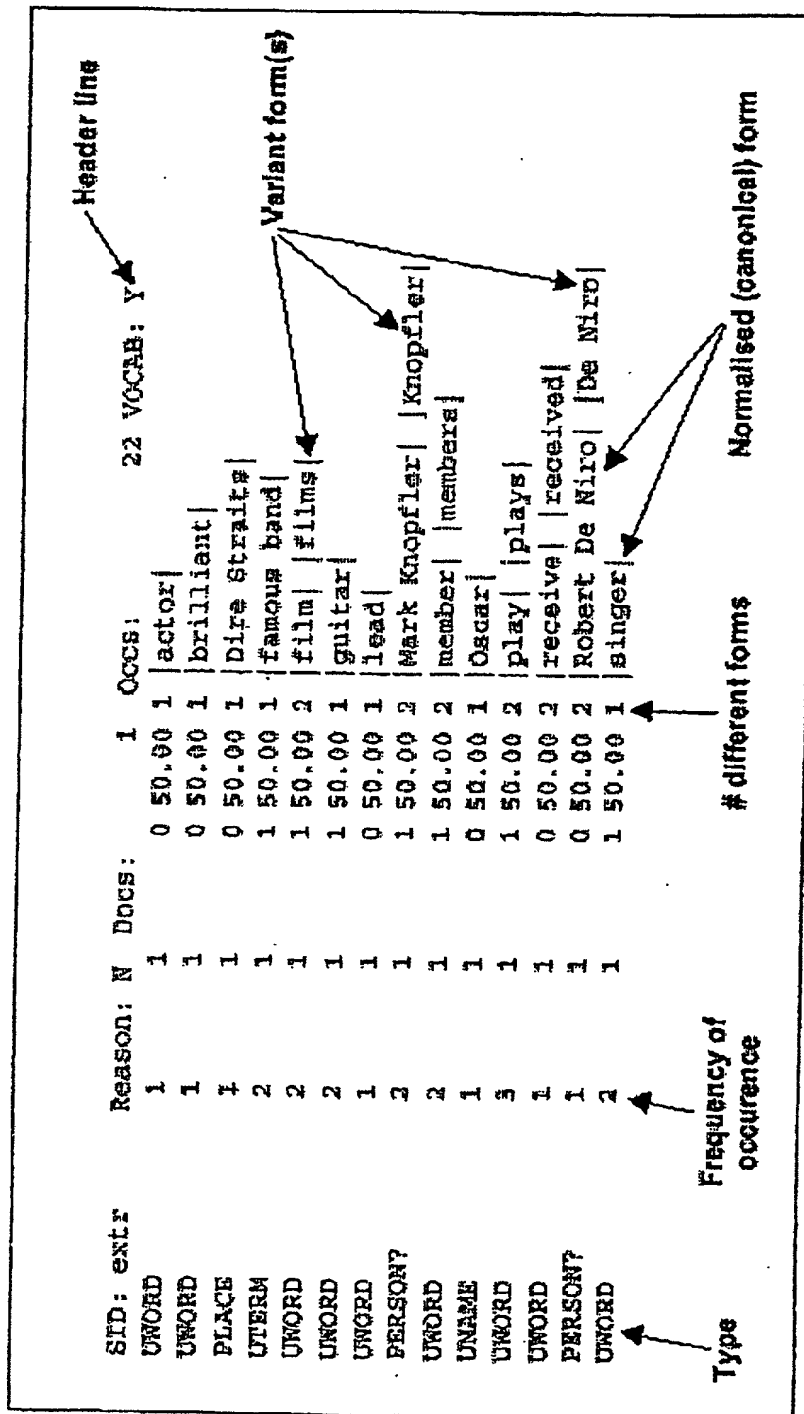


FIGURE 4

600



<i>Variant forms (key)</i>	<i>Canonical forms (value)</i>
actor	actor
brilliant	brilliant
...	...
film	film
films	film
...	...
Mark Knopfler	Mark Knopfler
Knopfler	Mark Knopfler
member	member
members	member
...	...

FIGURE 6

700

Mark Knopfler is a member of a famous band	Found in hashtable! Write to output file!
Mark Knopfler is a member of a famous	
Mark Knopfler is a member of a	
...	
Mark Knopfler is	
Mark Knopfler	
is a member of a famous band	
is a member of a famous	
...	
is a	
is	
a member of a famous band	Not found in hashtable → stop word. Skip!
a member of a famous	
...	
a	
member of a famous band	Not found in hashtable → stop word. Skip!
member of a famous	
...	
member	
of a famous band	Found in hashtable! Write to output file!
...	
of	
a famous band	Not found in hashtable → stop word. Skip!
a famous	
a	
famous band	Found in hashtable! Write to output file!

FIGURE 7

800

term, documentNo, sentenceNo, wordNo
Mark Knopfler, 1, 1, 1
member, 1, 1, 2
famous band, 1, 1, 3
singer, 1, 2, 1
play, 1, 2, 2
guitar, 1, 2, 3
Dire Straits, 2, 3, 1
famous band, 2, 3, 2
member, 2, 3, 3
Mark Knopfler, 2, 4, 1
lead, 2, 4, 2
singer, 2, 4, 3
play, 2, 4, 4
guitar, 2, 4, 5
Robert De Niro, 3, 5, 1
brilliant, 3, 5, 2
actor, 3, 5, 3
play, 3, 5, 4
film, 3, 5, 5
film, 3, 6, 1
receive, 3, 6, 2
Oscar, 3, 6, 3

FIGURE 8

0	1	2	3	4	5	...	8	9	10	11	12	13
actor	brilliant	Dire Straits	famous band	film	guitar	...	member	Oscar	play	receive	Robert De Niro	singer

FIGURE 9

0	1	2	3	4	5	...	15	16	17	18	19	20	21
Mark Knopfler	member	famous band	singer	play	guitar	...	brilliant	actor	play	film	film	receive	Oscar

FIGURE 10

0	1	2	3	4	5	6
famous band	film	guitar	Mark Knopfler	member	play	singer

FIGURE 11

0	1	2
Mark Knopfler	member	famous band

FIGURE 12

famous band, film, guitar, Mark Knopfler, member, play, singer, docNo, sentenceNo
1,0,0,1,1,0,0,1,1
0,0,1,0,0,1,1,1,2
1,0,0,0,1,0,0,2,3
0,0,1,1,0,1,1,2,4
0,1,0,0,0,1,0,3,5
0,1,0,0,0,0,0,3,6

FIGURE 13

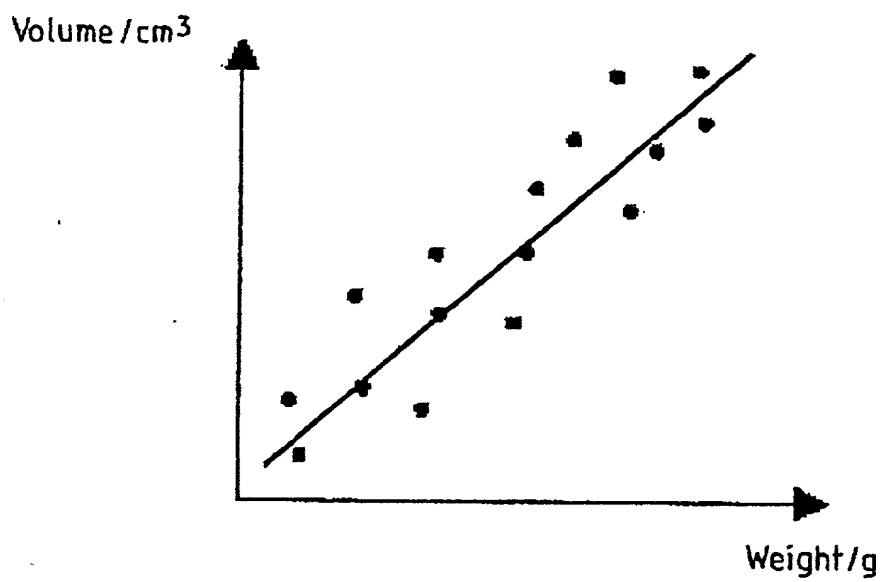


FIGURE 14

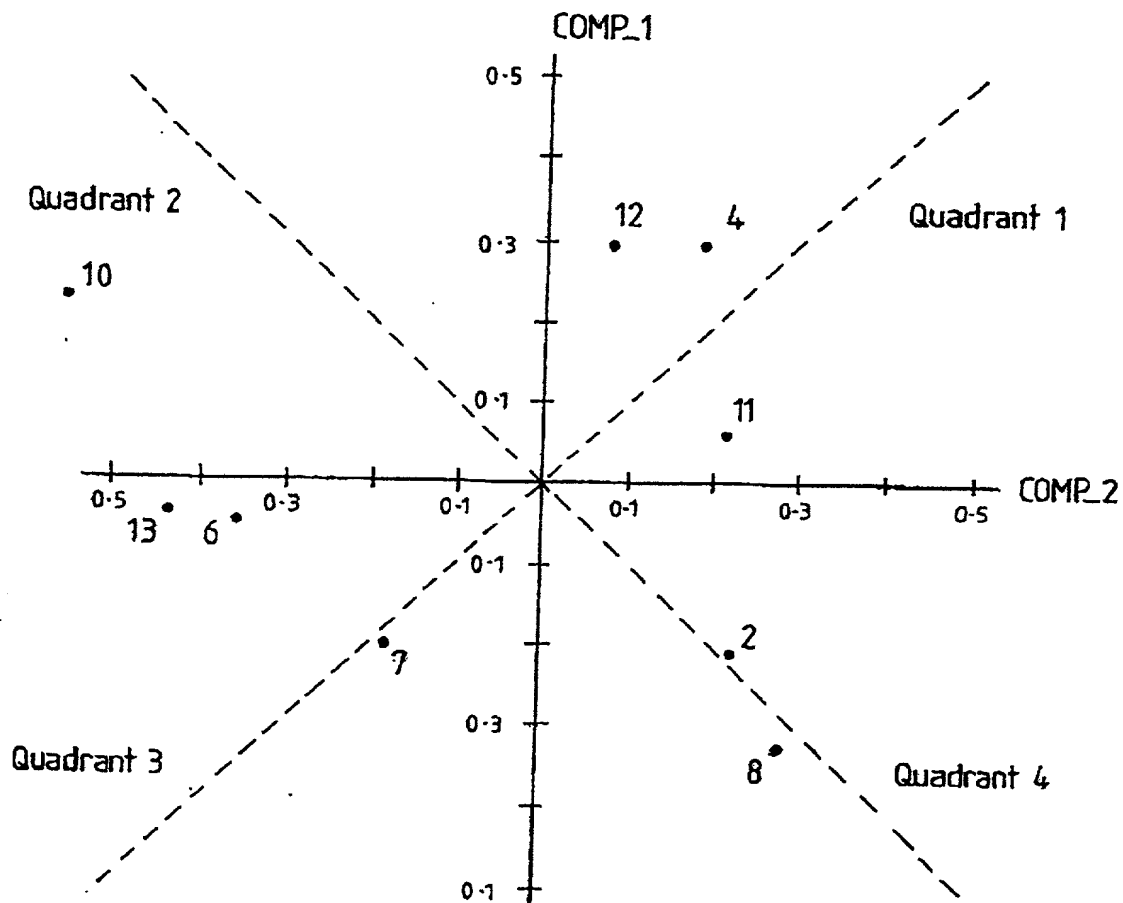


FIGURE 15

$$a) \quad |\vec{a}| = \sqrt{a_1^2 + a_2^2 + \dots + a_n^2}$$

$$b) \quad |\vec{\text{sentence}}| = \sqrt{\text{COMP}_1^2 + \text{COMP}_2^2 + \dots + \text{COMP}_n^2}$$

$$c) \quad \varphi = \arccos \left(\frac{\vec{a} \cdot \vec{b}}{|\vec{a}| \cdot |\vec{b}|} \right)$$

$$d) \quad \cos \alpha = \frac{\vec{a} \cdot \vec{u}_1}{|\vec{a}| \cdot |\vec{u}_1|} = \frac{(a_1 a_2 \dots a_n) \cdot (10 \dots 0)}{|\vec{a}| \cdot 1} = \frac{a_1}{|\vec{a}|}$$

$$e) \quad \cos \alpha = \frac{\text{COMP}_1}{|\vec{\text{sentence}}|}, \quad \cos \beta = \frac{\text{COMP}_2}{|\vec{\text{sentence}}|} \quad \text{etc}$$

FIGURE 16

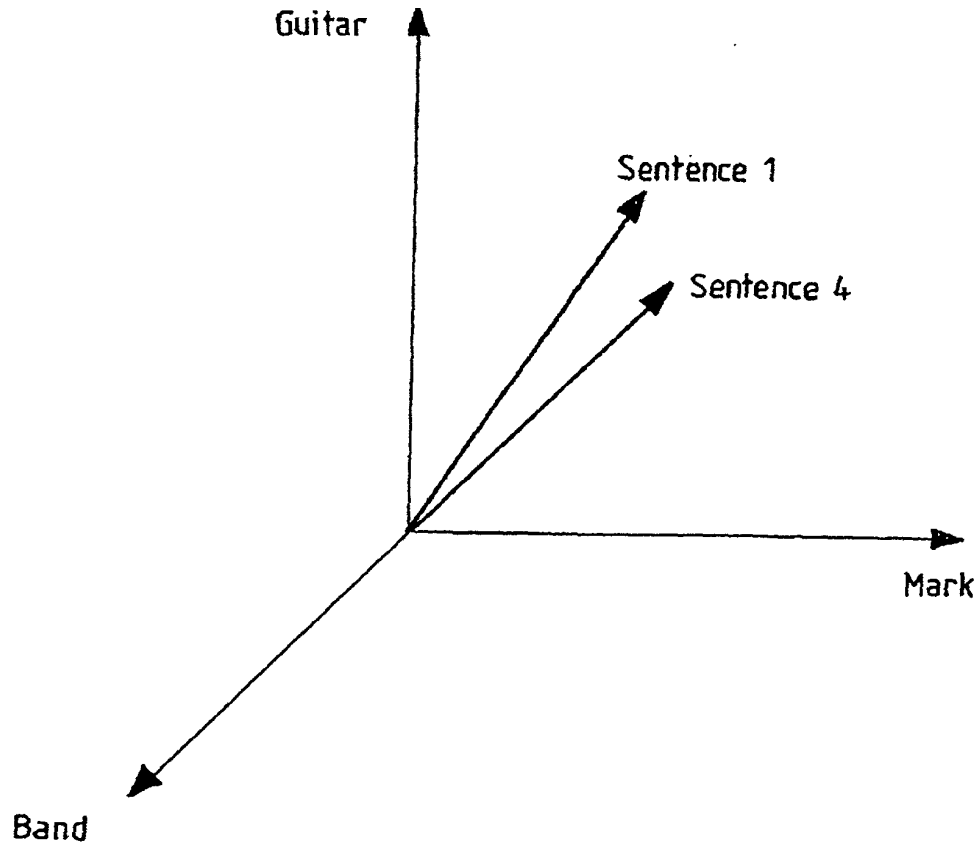


FIGURE 17

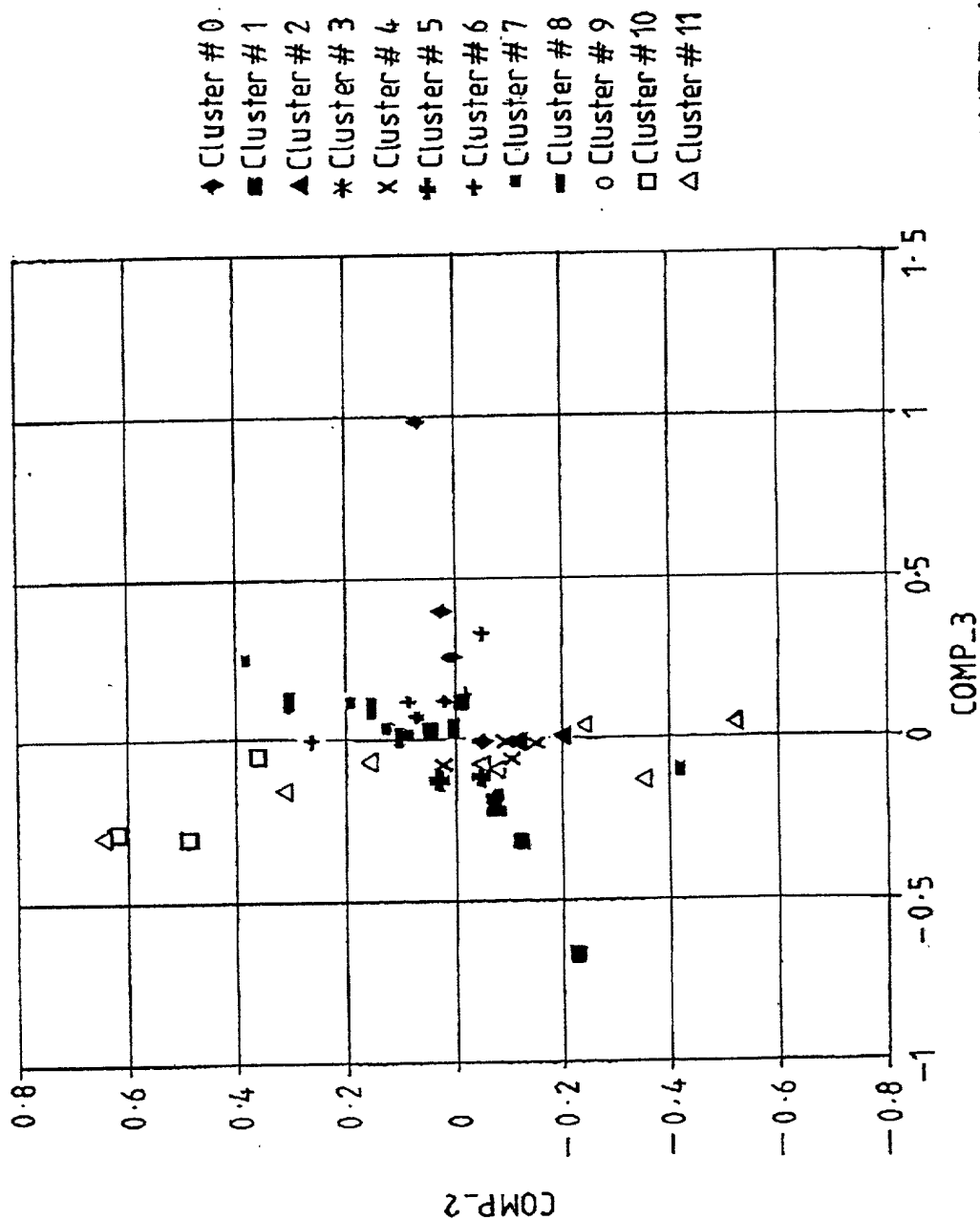


FIGURE 18